AMENDMENTS TO THE CLAIMS

Please amend claim 15 as follows:

Claims 1-14 (canceled)

Claim 15 (currently amended): A method for assembling sequence reads, comprising the steps of:

a) providing a plurality of sequence reads into a computer;

b) categorizing within the computer the plurality of sequence reads into at least two sub-groups of sequence reads based on an identifiable characteristic of the sequence reads in each sub-group;

c) matching <u>within the computer</u> sequence reads within each sub-group thereby creating assemblies of said sequence reads within each respective sub-group;

d) repeating steps b) and c) with all unassembled sequence reads and newly created assemblies; and

e) providing an assembled sequence to a user.

Claim 16 (original): A method as set forth in claim 15, wherein said categorizing step includes identifying sequence reads having similar sizes.

Claim 17 (withdrawn): A method as set forth in claim 15, wherein said categorizing step includes identifying sequence reads having similar entropies.

Claim 18 (withdrawn): A method as set forth in claim 15, wherein said categorizing step includes identifying sequence reads having similar GC percentages.

Claim 19 (withdrawn): A method as set forth in claim 15, wherein said categorizing step includes identifying sequence reads having similar longest repeats.

Claim 20 (withdrawn): A method as set forth in claim 15, wherein said categorizing step includes identifying sequence reads having similar natures of regions of high entropy.

Claim 21 (withdrawn): A method as set forth in claim 15, wherein said categorizing step includes identifying sequence reads having similar natures of regions of low entropy.

Claim 22 (withdrawn): A method as set forth in claim 15, wherein said categorizing step includes identifying sequence reads having similar compression ratios.

Claim 23 (withdrawn): A method as set forth in claim 15, wherein said categorizing step includes identifying sequence reads having compression ratios after sequence appending.

Claim 24 (withdrawn): A method as set forth in claim 15, wherein said categorizing step includes identifying sequence reads having two or more similar characteristics.

Claim 25 (previously presented): A method as set forth in claim 15, wherein said categorizing step includes identifying sequence reads having at least one of the following similar identifiable characteristics: sizes, entropies, GC (guanine cytosine) percentages, longest repeats, natures of regions of high entropy, natures of regions of low entropy, and compression ratios.

Claim 26 (previously presented): A method as set forth in claim 25, further comprising a step that comprises repeating steps b) and c) with an identifiable characteristic different from the identifiable characteristic used in step b).

Claim 27 (previously presented): A method as set forth in claim 15, wherein matching step comprises using PHRAP (phragment assembly program).

COMMENTS

This application was filed with 25 claims. Claims 1-14 were previously canceled. Claims 26 and 27 were previously added. Claims 15, 25 and 26 were previously amended. Claims 17-24 have been withdrawn from consideration in response to a Restriction Requirement. Thus, claims 15, 16 and 25-27 are currently under consideration.

Further Amendment to Claim 15

Applicant has further amended claim 15 to clarify that step c) is also performed "in the computer". Thus steps b) and c) are performed in the computer, and then steps b) and c) which must be repeated per step d) are repeated in the computer.

This is the same amendment to claim 15 which was previously submitted after the telephone interview of October 5, 2004, but which was not entered.

Per the Examiner's comments in Section 5 of the ADVISORY ACTION of November 4, 2004 it is Applicant's understanding that the previous rejections under 35 U.S.C. §112, 2nd paragraph and 35 U.S.C. §102 will be removed in view of this amendment to claim 15.

It is respectfully submitted that claim 15 as amended should be allowed over the cited references for the reasons previously presented during the telephone interview which are here summarized as follows.

With regard to the substantive rejection based upon Gong et al., Applicant's Attorney pointed out that the method of claim 15 is directed to a data processing

method that tends to provide improved efficiency and faster processing as compared to prior methods (see page 13 lines 12-20 of the specification). This computer-implemented processing method is achieved by (a) providing a plurality of sequence reads into the computer; (b) categorizing within the computer the plurality of sequence reads into at least two subgroups of sequence reads based on an identifiable characteristic of the sequence reads in each subgroup; (c) matching within the computer sequence reads within each subgroup thereby creating assemblies of said sequence reads within each subgroup; and (d) repeating steps (b) and (c) with all the unassembled sequence reads and newly created assemblies, which repetition of steps (b) and (c) must again be performed within the computer.

Thus, an improved processing method is provided as contrasted to prior art processing where an entire batch of data is attempted to be matched without first categorizing into groups, then matching within the groups, then recategorizing, then rematching, as required by claim 15.

It was pointed out that the Gong et al. reference does not teach the sequence of steps required by claim 15.

Gong et al. instead appears to describe an experimental procedure that included a lot of human intervention and was undoubtedly carried out over a very long period of experimentation. Gong et al. has nothing to do with teaching efficient data processing methods.

It is respectfully submitted that the invention of amended claim 15, and those claims dependent therefrom, are not shown or suggested by the disclosure of Gong et al.

The Withdrawn Claims 17-24

It is respectfully noted that claims 17-24, which were previously withdrawn in response to a Restriction Requirement, are also properly dependent from amended claim 15, and upon allowance of claim 15, those withdrawn claims should also be allowed.

Request For Extension Of Time

Applicant hereby requests a one-month retroactive extension of time to and including December 3, 2004 within which to respond to the Final Office Action of August 3, 2004. The $55.00 fee for that extension is enclosed along with the RCE fee of $395.00 in Applicant's enclosed check in the total amount of $450.00.

Any additional fees due in connection with the filing of this Response or this RCE may be charged to Deposit Account No. 23-0035.

Summary

In conclusion, it is respectfully submitted that with the clarifying amendments which have been made, the scope of claim 15 is clearly distinguished from any teaching of the Gong et al. reference, and accordingly reconsideration and an early indication of the allowance of pending claims 15, 16, and 25-27, along with the previously withdrawn claims 17-24 is requested.

Respectfully submitted,

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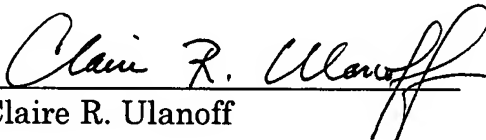Customer No. 34309

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